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ABSTRACT

Over 600 students were served by the Reading/Mathematics Lab Program of the Des Moines (Iowa) Independent Community School District. Students enrolled in the mathematics lab at all grade levels attained an increase in mean percentile rank from pre- to post-testing as measured by the Iowa Tests of Basic Skills administered in October 1982 and again in April 1983. The total group of students enrolled in both the reading and mathematics programs mastered in excess of 80 percent of the reading and mathematics objectives introduced to them. Program teachers in both reading and mathematics personally contacted parents of students at a rate that surpassed the criterion indicated in the objective. Three reading teachers contacted parents of all students served. Teachers developed lesson plans and conducted activities that emphasized a multicultural, nonsexist approach infused with the ongoing curriculum according to copies of specific lesson plans submitted by each program teacher to the project coordinator. One of the recommendations was that the program coordinator should examine results obtained on the reading subtest of the Iowa Tests of Basic Skills, particularly in grades 3-6, and steps should be taken to improve achievement at these levels. (Author/BW)

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REPORT OF EVALUATION

Reading/Mathematics Lab Program
Chapter II, ECIA

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Director of Evaluation and Research

August 31, 1983

TM 830 750

DES MOINES INDEPENDENT COMMUNITY SCHOOL DISTRICT
DEPARTMENT OF EVALUATION AND RESEARCH
EVALUATION ABSTRACT

August 31, 1983

PROJECT TITLE:	Reading/Mathematics Lab Program
COORDINATORS:	Mary Wagner, Wesley Chapman
STAFF:	.5 Coordinator (Mary Wagner) 11.0 Reading Teachers (FTE) 5.5 Math Teachers (FTE) (FTE = Fulltime Equivalency)
OPERATIONAL SITES:	Greenwood (reading only), Hanawalt, Hubbell (reading only), Moore, Samuelson, Windsor (reading only), Woodlawn, Brody (reading only), Meredith, Merrill, Hoover (reading only), Roosevelt (reading only) - Seven elementary, three junior high, and two senior high buildings
POPULATION SERVED: (80 days or more)	Reading 432 students Math 213 students Total duplicated count = 645 students Some students were served in both reading and math labs and were counted twice.
FUNDING:	SOURCE: Chapter II, ECIA and local Amount Budgeted: $368,561.66 Amount Expended: $350,472.52 (through August 1983 as provided by the district Controller's Office and the Office of Intercultural Programs)
COST PER PUPIL:	A total of 645 students were served for 80 days or more. The cost per pupil was approximately $543.37

COMMENTS:

1. Students enrolled in the mathematics lab at all grade levels attained an increase in mean percentile rank from pre to posttesting as measured by the Iowa Tests of Basic Skills administered in October 1982 and again in April 1983. While program objectives do not specify a criterion for the amount of increase in the percentile rank, any increase on the percentile rank scale from pre to post-testing is indicative of some growth.

2. The total group of students enrolled in both the reading and mathematics programs mastered in excess of 80 percent of the reading and mathematics objectives introduced to them.

3. Program teachers in both reading and mathematics personally contacted parents of students at a rate that surpassed the criterion indicated in the objective. Three reading teachers contacted parents of all students served.

4. Teachers developed lesson plans and conducted activities that emphasized a multicultural, nonsexist approach infused with the ongoing curriculum according to copies of specific lesson plans submitted by each program teacher to the project coordinator.

RECOMMENDATIONS:

1. The program coordinator should examine results obtained on the reading subtest of the Iowa Tests of Basic Skills particularly in grades three, four, five and six. Steps should be taken to improve achievement at these levels.

2. The reading lab program objective concerning performance of first grade students as measured by pre/posttests of the Systematic Approach to Reading Improvement (SARI) management system should be rewritten to precisely specify the level of achievement desired.

3. The program coordinator should consider specifying criteria for gains demonstrated by students on the Iowa Tests of Basic Skills. Gain criteria might be expressed in the student performance objective as an increase in percentile rank from pre to posttesting of a certain magnitude rather than just saying simply "an increase." The amount of increase expected could be different at various grade levels according to varying levels of growth expectation at certain stages.

A copy of the complete Evaluation Report is available upon request from the Department of Evaluation and Research, 1800 Grand Avenue, Des Moines, IA 50307-3382.

I. PROGRAM DESCRIPTION

Origin of the Program

A program providing additional reading and math services to students through use of Title VI, E.S.A.A. funds was originally implemented during the second semester of the 1977-78 school year. During the initial semester, the program operated at several sites that also received Title I services. In the fall of 1978, however, funds were used to hire staff that would serve students only at Voluntary Transfer Program sites - students that would ordinarily qualify for Title I services at a Title I school, but who were attending another school as part of the Voluntary Transfer Program. This practice has continued since that time. Beginning with the 1982-83 school year funds for operating the program were allocated through block grant funds (Educational Consolidation Improvement Act) and by the Voluntary Transfer Program. The program is known as the Reading and Math Lab Program.

Educational Activities

Prior to planning individualized programs in reading, teachers used tests to diagnose individual reading deficiencies in addition to those used in needs assessment. Some of the tests used included the following: Informal Reading Inventory, Spache Diagnostic Reading Scales, Informal Phonics Survey, Durrell Listening Test, and the Ekwall Reading Inventory.

Program teachers used a variety of techniques and materials to supplement the reading instruction provided by regular classroom teachers. In Grade 1, the Waupun Strategies in Early Childhood Education objectives were followed until completion of the auditory verbal and visual verbal objectives. When this occurred and the student was considered to be

ready for formal reading instruction, the Systematic Approach to Reading Improvement (SARI) management system was used. This management system consists of performance objectives with criterion referenced tests for determining mastery. For grades 7-10, the district's basal reading objectives were used. The objective of the design is to expedite individually guided instruction for reading skill development. Educational plans detailed the sequence of objectives introduced and achieved by each student. These plans were maintained by the teachers and monitored by the program coordinator.

Student team learning situations which reflected a multicultural, nonsexist approach were implemented throughout the 1982-83 school year by the Reading and Math Lab program teachers. Students were encouraged to assume leadership roles and interact positively with their peers while striving for established group goals based on their academic objectives. The program coordinator monitored these activities. Written lesson plans were submitted as documentation for the activity.

Organization for Instruction

Reading

Reading teachers instructed small groups of students for about 150 minutes per group weekly at the elementary level and from about 235 minutes to 275 minutes per group weekly at the secondary level depending on building. The elementary and secondary teacher-student ratios ranged from 1-8 during each instructional period, with each teacher instructing a maximum of 40 students daily. Elementary students receiving Reading Lab services had reading instruction from both the classroom teacher and the reading teacher. Instruction by the lab teacher took place in a designated reading area.

Secondary students received reading instruction in reading laboratories and small group classes in addition to regular attendance in English or reading classes. Students were scheduled into Reading Lab classes from study halls or classes other than English or reading. The major purpose of the secondary program was to provide students who were not functioning appropriately in academic achievement an opportunity which would lead to full participation in the regular school program.

Mathematics

Each program math teacher instructed a maximum of 40 students with each elementary pupil receiving approximately 150 minutes of instruction weekly and each secondary pupil receiving about 220 minutes of instruction per week. Math teachers provided supplemental instruction on the concepts or skills presented by the classroom teacher according to one of the following modes:

a. During regular math periods: 50% of the period daily or 100% of the period on alternating days,

or

b. During periods other than the regular math periods.

As in the reading program, lab teachers organized their groups in such a manner that students residing in the school attendance area were served simultaneously with the Voluntary Transfer Program students. This was done to insure that transfer students were not segregated in the receiving school.

Program Enrollment

Exhibits 1 and 2 below show the buildings with a lab program in reading and/or mathematics, the fulltime equivalency of the lab staff at each building and the number of students served, both voluntary transfer and local neighborhood. The figures include only students who were enrolled 80 days or more according to records kept by each teacher.

EXHIBIT 1

Students Served--Reading Lab Program

School	Teacher FTE	VTP Students	Neighborhood Students	Total Students
Greenwood	1.0	15	21	36
Hanawalt	0.5	11	9	20
Hubbell	.5	7	10	17
Moore	1.0	17	23	40
Samuelson	1.0	26	14	40
Woodlawn	1.0	18	20	38
Windsor	1.0	23	17	40
Brody	1.0	17	26	43
Meredith	1.0	21	18	39
Merrill	1.0	21	26	47
Hoover	1.0	17	19	36
Roosevelt	1.0	18	18	36
All Schools	11.0	211	221	432

EXHIBIT 2

Students Served--Math Lab Program

School	Teacher FTE	VTP Students	Neighborhood Students	Total Students
Hanawalt	0.5	10	10	20
Moore	1.0	18	22	40
Samuelson	1.0	24	14	38
Woodlawn	1.0	13	26	39
Meredith	1.0	22	17	39
Merrill	1.0	20	17	37
All Schools	5.5	107	106	213

In addition to the 16.5 teaching positions, there was a halftime coordinator position for this program. This created a total fulltime equivalency staff of 17.0. Teachers were encouraged to serve students from both the attendance area of the program buildings (neighborhood students) and those attending their building as a result of the Voluntary Transfer Program (VTP) on an approximately equal basis in numbers. As

shown in the above exhibits, students in both reading and math were split almost exactly evenly between these two categories when total program enrollment is considered, even though there are a few instances of considerable variation within buildings.

Theories Utilized in the Program

Instructional techniques used in the Reading and Math Lab program borrow heavily from theories developed by individuals such as Piaget, Bruner, Skinner, Maslow, Glasser, and Dienes.

In summary, the theories emphasize:

a. Children learn in different ways in different periods of cognitive development. Since most of the children in elementary schools are in Piaget's concrete operational period the appropriate instructional technique is to provide experiences for the student with concrete objects. Further experiences at the representational level must be programmed before expecting children to operate with concepts at the abstract level.

b. Children must conserve attributes (number, mass, distance, volume) before concepts involving those attributes can be learned.

c. The ideas of assimilation, accommodation and the principle of multiple embodiment imply that children need many concrete experiences and time to grasp concepts and skills before mastery can be expected.

d. Children must be active participants in their own learning.

e. The concept of readiness operates at all stages of learning.

f. Students' self-concepts and expectations for themselves are related to their achievement.

g. Teacher expectations for and attitudes toward students affect student performance.

Inservice Activities

Various inservice activities were conducted throughout the 1982-83 school year. Due to the similarities between the lab and Chapter I programs, the lab program staff attended some of the same sessions as

the Chapter I program teachers. During the school year, the staff participated in meetings on content, methodology, testing and organizational procedures. These meetings were conducted as needed by the program coordinator. Lab program teachers attended local or regional professional meetings as funds permitted. Teachers also conducted informational meetings within their buildings to familiarize staff with lab program procedures, goals, and objectives. The program coordinator assisted in this building communication.

Parent Contact and Participation

A major effort was made to communicate with the parents of students served by the program. To accomplish this, reading and mathematics lab personnel engaged in the following activities:

a. made home visits;

b. invited parents of participating students by letter, telephone or in person to visit and/or assist in their son's or daughter's class;

c. invited parents to conferences and open house functions by letter, telephone or in person.

In order to successfully complete parent contacts, program teachers were released from their instructional duties one-half day per week first semester to confer with parents and/or arrange for conferences. This half day was also used by teachers for activities such as testing, inservice meetings and working with classroom teachers.

II. BUDGET AND EXPENDITURES

Funding for this program was provided through provisions of the Education Consolidation and Improvement Act (ECIA) - Chapter II and the district budget for the Voluntary Transfer Program. Data for Exhibit 3 was provided by the Controller's Office and the Office of Intercultural Programs. The data provided by the Controller's Office for the expenditures of funds from ECIA, Chapter II was as of August 31, 1983.

As can be seen from Exhibit 3, a total of $350,472.52 was expended for operation of this program. The amount expended represented 95.1 percent of the amount budgeted. With a count of 645 students served in the reading and math labs for 80 days or more, the cost per pupil was approximately $543.37. This compares to the slightly lower cost of $519.30 per pupil for the program during 1981-82.

EXHIBIT 3

Budget and Expenditures*

Category	E.C.I.A.		District (Voluntary Transfer Program)		Total	
	Budgeted	Expended	Budgeted	Expended	Budgeted	Expended
Salaries & Benefits	$176,450.00	$181,003.74	$154,211.66	$156,449.31	$330,661.66	$337,453.05
Contracted Services	3,000.00	236.25			3,000.00	236.25
Ins. Materials	3,000.00	1,452.59			3,000.00	1,452.59
Miscellaneous Costs	2,500.00	194.60			2,500.00	194.60
Evaluation	5,400.00	5,400.00			5,400.00	5,400.00
Transporation			15,000.00	331.26	15,000.00	331.26
Printing			6,000.00	3,873.94	6,000.00	3,873.94
Supplies			3,000.00	1,530.83	3,000.00	1,530.83
Total	$190,350.00	$188,287.18	$178,211.66	$162,185.34	$368,561.66	$350,472.52

*Figures provided by the Controller's Office and the Office of Intercultural Programs as of August 31, 1983.

III. RESULTS OF EVALUATION

During the 1982-83 school year, seven process and three performance objectives were used in evaluation of the Reading and Mathematics Lab Program. The process objectives dealt with various activities carried out by either the program coordinator or teachers while the performance objectives dealt with learning outcomes of students. Although the reading and mathematics projects are covered by separate sets of objectives, they will be dealt with jointly in this evaluation report due to the similarity in the design and activities of the two programs.

An accountability file was prepared for the project in order to facilitate the collection and storage of supportive data for each objective. This file was maintained in the office of the project coordinator at Meredith Junior High School, with a duplicate copy in the Department of Evaluation and Research. Monthly verification of receipt of data was made through telephone calls to the project coordinator's office and by submission of documentation to the Department of Evaluation and Research.

As previously stated, objectives for both the reading and mathematics project appear in this report. Objectives for the reading program will be listed in the following order:

A. Administration Process Objectives,
B. Student Performance Objectives,
C. Teacher Process Objectives.

Objectives for the math program will follow in the same order. Each objective will be quoted, followed by the evaluation pertaining to that objective. Comments and recommendations appear in the final section of this report.

Administration Process Objectives - Reading Lab Program

II A 1. Forty-five days after the close of the program year an evaluation summary will be sent to the Director of Intercultural Programs and the Executive Directors of Elementary and Secondary Education.

Documentation: report of Reading and Mathematics Lab Program Year written by the Department of Evaluation and Research and submitted to the Director of Intercultural Programs and Executive Directors of Elementary and Secondary Education.

This Report of Evaluation serves as documentation for objective II A 1. The official end of the program year was June 3, 1983. Forty-five working days following June 3 was August 4, 1983. While a draft copy of this report was prepared by this date, delays in obtaining student performance data (ITBS/ITED pre/post scores) made it impossible to produce the final copy of the report by the date specified. This objective was not achieved.

Student Performance Objectives - Reading Lab Program

III A 1. At the end of the instructional year, program students (grades 2-11) enrolled in the reading program for a minimum of 80 days will demonstrate an increase in the average (mean) percentile rank from pre to posttest on the vocabulary and comprehension subtests of the Iowa Tests of Basic Skills (grades 2-8), and the Iowa Tests of Educational Development (grades 9-12).

Documentation: ITBS scores and ITED scores from the fall and spring testing submitted to the Director of Evaluation and Research at the end of the program year.

Table 1 reports results of students completing the appropriate level of the ITBS or ITED during 1982-83. Results are indicated for only those students who took both the pre and posttest. Scores on both the vocabulary and reading comprehension subtests are reported in the form of percentile ranks. The student performance objective states that

there will be an increase in the percentile rank from pre to posttest at all grade levels. Results indicate that on the vocabulary subtest, gains in percentile rank occurred at all grade levels except grade eight. There is no vocabulary subtest on the ITED (grades 9-11).

On the reading subtest, gains in percentile rank were achieved at all grade levels except three, four, five and six. At grades three and six, the mean percentile rank remained the same from pre to posttest, while at grades four and five a slight decline was observed. As results for fourth and fifth grade students during 1981-82 exhibited the same pattern, it is recommended that administration of this program take steps to improve achievement at these levels. It should be noted that gains on the reading subtest at the secondary grade levels (7-11) were of considerably greater magnitude than in previous years of this program's operation.

A second recommendation offered at this time relates to specifying criteria for gains demonstrated by students on the Iowa Tests of Basic Skills. Administration of the program should be aware that in some instances, realistically expressed expectations of improvement may themselves help foster that improvement. Gain criteria might be expressed in the student performance objective as an increase in percentile rank from pre to posttesting of a certain magnitude rather than just saying "an increase." The amount of increase expected could be different at various grade levels according to varying levels of growth expectation at certain stages.

TABLE 1

ITBS/ITED Pre/Post Results
Vocabulary and Reading (Mean Percentile Rank)

Grade	Level/Test	Vocabulary				Reading			
		N	Pre	Post	Gain	N	Pre	Post	Gain
2	7 - ITBS	38	33	47	14	38	35	51	16
3	8 - ITBS	42	26	28	2	42	31	31	0
4	10 - ITBS	16	31	37	6	16	31	30	-1
5	11 - ITBS	16	36	40	4	16	45	41	-4
6	12 - ITBS	19	29	32	3	19	35	35	0
7	13 - ITBS	73	25	28	3	73	25	32	7
8	14 - ITBS	24	24	22	-2	24	26	31	5
9	I - ITED	**				19	29	34	5
10	I - ITED	--				19	24	29	5
11	II - ITED	--				5	17	33	16

**ITED does not yield a separate vocabulary score. The reading score is a compilation of three sections: literary materials, social studies (part II) and science (part II).

III A 2. At the end of the program year lab students enrolled a minimum of 80 days will demonstrate reading proficiency by mastering an average of 80 percent of the reading objectives introduced according to each students' educational plan.

Documentation: Semester Summary Report submitted at the end of the year to the program coordinator. Educational plans on file with the reading lab teacher.

Program teachers recorded objectives introduced and mastered on each student's educational plan during the 1982-83 school year. At the end of the year, data for each student was recorded and summarized on the Semester Summary Report form.

Table 2 reports data on objectives mastery for students enrolled in the reading lab program 80 days or more. This included a total of 432 students at 12 buildings. Composite data at the end of the table presents summary information by grade level. For the total population of 432 students enrolled in the reading lab program 80 days or more, 85.2 percent of the objectives introduced were attained. This exceeds the

criteria of 80 percent indicated by the objective. When reporting the data by grade level (see last section of Table 2) only 2 grade levels fell below the 80 percent criterion. The data shows students at grade 4 attaining 78.5 percent and students at grade 6 attaining 77.7 percent of the objectives introduced. Reporting by building, students at Woodlawn and Merrill attained less than 80 percent, 77.2 and 77.4 percent respectively. It should be noted that these levels are only slightly below the 80 percent criterion. At Greenwood the highest level of attainment was reported--94.1 percent. This objective was achieved.

TABLE 2

Reading Objectives Introduced and Attained

School	Grade	N	Average Number of Objectives Introduced	Percent Attained
Greenwood	1	10	17	94.1
	2	8	21	95.9
	3	5	17	91.9
	4	3	10	96.7
	5	4	16	91.9
	6	6	12	93.2
	1-6	36	16	94.1
Hanawalt	1	4	33	72.5
	2	4	41	84.8
	3	8	37	84.6
	4	1	41	90.2
	5	0		
	6	3	32	75.0
	1-6	20	36	81.5
Hubbell	1	5	30	90.5
	2	5	33	87.9
	3	4	32	90.6
	4	2	30	84.7
	5	1	39	92.3
	6	0		
	1-6	17	32	89.2
Moore	1	8	51	90.7
	2	14	40	84.7
	3	6	36	87.6
	4	11	24	75.7
	5	1	35	71.4
	6	0		
	1-6	40	37	84.8
Samuelson	1	10	11	89.3
	2	5	19	97.9
	3	6	21	85.8
	4	10	13	90.8
	5	6	12	76.7
	6	3	21	88.7
	1-6	40	15	88.7
Windsor	1	6	13	94.7
	2	9	17	90.7
	3	10	15	83.2
	4	0		
	5	7	15	93.2
	6	8	11	69.3
	1-6	40	14	86.4

School	Grade	N	Average Number of Objectives Introduced	Percent Attained
Woodlawn	1	11	23	71.5
	2	3	35	84.9
	3	6	12	100.0
	4	6	16	55.7
	5	5	16	100.0
	6	7	15	69.6
	1-6	38	19	77.2
Brody	7	34	22	91.5
	8	9	14	91.3
	7-8	43	21	91.5
Meredith	7	31	31	82.3
	8	8	30	95.4
	7-8	39	30	84.9
Merrill	7	39	18	77.3
	8	8	14	77.5
	7-8	47	17	77.4
Hoover	9	17	34	81.7
	10	15	35	86.9
	11	3	27	78.0
	12	1	25	88.0
	9-12	36	33	83.8
Roosevelt	9	15	8	88.3
	10	13	8	90.0
	11	8	8	91.8
	9-11	36	8	89.7

Composite Data

Grade	N	Average Number of Objectives Introduced	Percent Attained
1	54	24	85.7
2	48	29	88.0
3	45	24	87.5
4	33	19	78.5
5	24	16	89.3
6	27	16	77.7
7	104	23	83.7
8	25	19	90.1
9	32	22	82.9
10	28	22	87.4
11	11	13	83.9
12	1	25	88.0
1-12	432	22	85.2

III A 3. At the end of the program year, first grade lab students enrolled at least 80 days in the reading program will have passed 80 percent of the SARI (Systematic Approach to Reading Improvement) Level 2 pre and posttests.

Documentation: SARI scores submitted to the Director of Evaluation and Research at the end of the program year.

In the SARI (Systematic Approach to Reading Improvement) management system, a student must pass six pre and posttests in order to complete Level 2. The tests in Level 2 and the number of items on each are as follows: alphabet - 42 items; vocabulary (2 tests) - 54 items; rhyme - 6 items; initial consonants - 18 items; and sequence - 4 items. Passing 80 percent of the 6 tests (not 80 percent of the items on these tests) would mean passing 4.8 tests. Obviously, it is not possible to evaluate using this criterion. Since passing 5 out of 6 tests would be passing 83.3 percent, this was the criterion used in Table 3. It is recommended that this objective be revised to indicate either a complete level be passed or a specific number of tests of each level be passed in order to accomplish the objective. The percentage figure should be eliminated.

TABLE 3

First Grade Reading Lab Students
Systematic Approach to reading Instruction (SARI) Results
Level 2

School	Number of Students	Percent Passing 5 of 6 Tests	Percent Passing 6 of 6 Tests
Greenwood	9	100.0	100.0
Hanawalt	4	25.0	25.0
Hubbell	4	75.0	50.0
Moore	8	100.0	87.5
Samuelson	10	100.0	100.0
Windsor	NO DATA REPORTED		
Woodlawn	11	100.0	100.0
All Schools	46	91.3	87.0

As indicated by Table 3, 91.3 percent of the 46 first grade students for whom data was reported passed at least 5 of the 6 posttests associated with Level 2. Of the 46 students 40 or 87.0 percent had passed all 6 of the tests. Some of these students had gone on to complete (pass) tests in Level 3 and even Level 4. Data was not reported for students at Windsor, though other documentation submitted indicates that 6 first grade students were served at least 80 days in the reading lab program at that building. This objective was achieved.

Teacher Process Objectives - Reading Lab Program

IV B 1. The program teachers in each building served by the program will identify eligible student participants by September 30.

Documentation: class lists of identified students and the needs assessment checklist submitted to the program coordinator with the September accountability data.

Class lists indicating students identified to receive service in the reading lab program were submitted at the end of September. Revisions were sent in at other times as needed. These, along with teaching schedules, were maintained by the project coordinator in her office at Meredith Junior High School. In addition to student name and ID number, the class lists indicated whether a student was previously enrolled in this program or in Chapter I, the instrument(s) administered to the student for admittance to this program and the score attained, and the time of the school day during which the student had a reading, English, or language arts class instructed by a classroom teacher.

The class lists themselves are not the best indicator of the number of students served during the 1982-83 school year. As they are prepared

very early in the year, they do not reflect the more stabilized population that is evidenced later on in the year. For a more meaningful tabulation of enrollment the reader should refer to Exhibit 1 in the Program Description section of this report. The data shown there indicate students who were served in the program 80 days or more. It also shows, by building, the number of participating students residing in the attendance area of the building and the number participating as a result of the district's Voluntary Transfer Program. The design for this program states that the enrollment should consist of approximately an equal number of students from both categories. The enrollment figures verify this for the program as a whole; however, some concern regarding individual building balance between the two groups should be noted.

IV B 2. Program teachers will develop and maintain an educational plan for each student receiving reading services.

Documentation: educational plans on file with each program teacher.

Program teachers developed and maintained educational plans for all students during the 1982-83 school year. The plans were kept in folders for each student at the buildings in order that teachers could constantly record information pertaining to progress of program students. The project coordinator reviewed and initialed the educational plans maintained by each teacher during October 1982 and again in April 1983. The purpose for this review was to see if, in fact, an educational plan existed for each student and if progress toward the objectives in the plan was being recorded.

The format of the educational plan was adapted from and is similar to that used by the Chapter I Reading Program. The booklets in which the plans are entered (one for elementary, one for secondary) contain an area to record diagnostic information as well as a section in which progress on the SARI (elementary) or Houghton Mifflin (secondary) objectives is recorded. There is also space provided for teachers to indicate supplemental materials used and activities in which students participated.

IV B 3. Program teachers will instruct a maximum of 40 students. Students will receive 110-250 minutes of instruction weekly.

Documentation: reading schedule submitted to the program coordinator by September 30 and resubmitted each time a schedule change is made.

Reading schedules were submitted by each program teacher by September 30, 1982. A copy of the schedule form appears in Appendix A. Revisions in original schedules were sent in by some teachers at various times later in the year. The schedules indicated teaching times, number of students per group, name of the reading or English classroom teacher and planning times. Also shown was the total number of students served and the teaching minutes per day.

In the section of the program description entitled "Organization for Instruction," it is indicated that teachers will serve a maximum of 40 students in groups ranging from 1 to 8 for 110-250 minutes per group weekly. The schedules indicate compliance at all buildings to the instructional time range per group criterion on a weekly basis. Some minor variations from the guidelines were noted in both group sizes and total number of students served. These are reported below for the project coordinator's information. No specific action is needed as the variations were minor and the guidelines in the program design in these

areas have been reported by the project coordinator to be approximations. It is realized by the Department of Evaluation and Research that due to scheduling constraints at the building level, some discrepancies may be inevitable.

Variations in total number of students served (proposal indicates maximum of 40):

Brody --- 43
Merrill - 43

Low numbers: Windsor --- 35
Meredith -- 35
Hoover ---- 32

Variations in group size (proposal indicates 1 to 8):

Brody ----- 1 group of 10; 2 groups of 9
Merrill --- 1 group of 12; 2 groups of 9
Roosevelt - 1 group of 13; 1 group of 9

As schedules were submitted in a timely manner by all teachers, this objective was achieved.

IV B 4. By the end of the first semester, program teachers will have personal contact at home, school, or other prearranged location with parent(s) of at least 75 percent of the total number of students enrolled in the program for a minimum of 20 days. The parents of 65 percent of students new to the program will be visited in their homes or at a place selected by the parent(s).

Documentation: parent contact report on the semester summary submitted to the program coordinator, the building principal, and the Department of Evaluation and Research with the January accountability data.

IV B 5. By the end of the second semester each program teacher will have had a personal contact at home, school, or by telephone with the parent(s) of at least 75 percent of the total number of students enrolled in the program during the second semester.

Documentation: parent contact report on the semester summary submitted to the program coordinator, the building principal, and the Department of Evaluation and Research with the May accountability data.

Tables 4 and 5 report data on parent contacts for the first and second semester respectively. The discussion following the tables relates to both Objectives IV B 4 and IV B 5.

TABLE 4

Reading Parent Contacts
First Semester

School	Number of Students	Number Contacted Personally*	Percent	Number of new Students	Number Contacted Personally	Percent	Total Contacts**
Greenwood	43	34	79.1	32	24	75.0	56
Hanawalt	21	20	95.2	10	9	90.0	35
Hubbell	21	20	95.2	6	6	100.0	32
Moore	45	40	88.9	22	21	95.5	147
Samuelson	40	40	100.0	16	16	100.0	131
Windsor	34	19	55.8	10	3	30.9	40
Woodlawn	43	42	97.7	DATA	NOT	REPORTED	90
Brody	44	38	86.4	34	30	88.2	130
Meredith	39	30	76.9	31	25	80.6	125
Merrill	45	28	62.2	42	26	61.9	129
Hoover	30	23	76.7	30	23	76.7	104
Roosevelt	40	40	100.0	16	16	100.0	111
All Schools	445	374	84.0	249	199	79.9	1130

*Contacted personally = home visit, conference, visit to school by parents or any other face to face verbal communication.

**Total contacts = includes categories above plus telephone calls and other communications, i.e., letters.

TABLE 5

Reading Parent Contacts
Second Semester

School	Number of Students	Number Contacted Personally*	Percent	Total Contacts**
Greenwood	35	29	82.9	32
Hanawalt	20	19	95.0	23
Hubbell	22	18	81.8	37
Moore	40	32	80.0	93
Samuelson	43	37	86.0	124
Windsor	41	27	65.9	37
Woodlawn	37	34	91.9	49
Brody	39	21	53.8	92
Meredith	40	35	87.5	51
Merrill	45	39	86.7	118
Hoover	33	31	93.0	46
Roosevelt	40	40	100.0	63
All Schools	435	362	83.2	765

*Contacted personally = home visit, telephone call, conference, visit to school by parent or any other verbal communication.

**Total contacts = includes categories above plus other communications, i.e., letters.

For the first semester, the objective concerning parent contacts contains two criterion levels. It states that parents of at least 75 percent of the students enrolled 20 days or more will have been contacted personally by the program teacher during the semester. "Personal contact" was defined to include home visits, conferences at school or classroom observation by the parents. Letters were sent home by teachers and telephone calls were not considered personal contacts during the first semester. The objective further states that parents of 65 percent of the students new to the program will be contacted personally.

Data submitted for 445 program students enrolled 20 days or more revealed that both parts of this objective were met by the program even though teachers at two individual buildings, Windsor and Merrill, did not meet the criterion for parent contacts. It should also be noted that reading teachers at Samuelson and Roosevelt contacted all parents personally, and the teachers at Hubbell, Samuelson and Roosevelt reported contacting parents of all new students. Except for the individual cases noted, this objective was achieved.

For the second semester, the parent contact Objective (IV B 5) was simplified. Teachers were now allowed to include telephone calls as personal contacts. Only letters were exempt. As was the case during the first semester, this objective was achieved overall. Individual buildings not meeting the criterion were Brody and, again, Windsor. The program teacher at Roosevelt reported contacting 100 percent of the parents.

Though not a part of the objectives, a tally of <u>all</u> contacts was made. This figure includes cases where multiple contacts were made

for a single student. It also includes many cases where letters were sent. The tally showed 1,130 contacts during the first semester followed by 765 during the second semester. The total number of contacts made in 1982-83 was 1,895.

IV B 6. Student Team Learning -- During the school year, program teachers will develop and maintain team learning situations which reflect a multicultural, nonsexist approach as children interact positively and strive for objectives-based goals in the areas of reading and math. (Refer to School Practices That Improve Race Relations and Student Teams and Achievement Divisions by Robert E. Slavin, Johns Hopkins University.)

Documentation: congruent with the goals of the reading and math lab program, specific lesson plans will be implemented infusing multicultural, non-sexist concepts and submitted to the program coordinator.

During the 1982-83 school year, program teachers were required to document the inclusion of at least one lesson plan that included emphasis in the area of multicultural, nonsexist concepts. A form was provided by the project coordinator that suggested a one week team learning activity. The form suggested a general day-by-day plan for conducting the activity and provided a place for recording activities. Some teachers submitted supplementary material along with the standard form. A copy of the form may be found in Appendix B.

Documentation was received from all program teachers with one exception. This individual was absent from school and was not able to implement her lesson. It was reported by the project coordinator that this teacher had, in fact, prepared a lesson plan which would have been followed had she been on duty.

The documentation submitted revealed that some seemingly interesting and valuable learning situations were planned and carried out. It was obvious that many of the teachers planned carefully to develop activities

related to the objectives in the educational plans and, at the same time, infused multicultural, nonsexist concepts. Working together, making group decisions and participation in an activity by all individuals, seemed to permeate the plans submitted. This objective was achieved.

Administration Process Objectives - Math Lab Program

II A 1. Forty-five days after the close of the program year an evaluation summary will be sent to the Director of Intercultural Programs and the Executive Directors of Elementary and Secondary Education.

Documentation: report of Reading and Math Lab Program Year written by the Department of Evaluation and Research and submitted to the Director of Intercultural Programs and Executive Directors of Elementary and Secondary Education.

This Report of Evaluation serves as documentation for Objective II A 1. The official end of the program year was June 3, 1983. Forty-five work days following June 3 was August 4, 1983. While a draft copy of this report was prepared by this date, delays in obtaining student performance data (ITBS/ITED pre/post scores) made it impossible to produce the final copy of the report by the date specified. This objective was not achieved.

Student Performance Objective Math Lab Program

III A 1. At the end of the instructional year, program students (grades 1-8) enrolled in the math program for a minimum of 80 days will demonstrate an increase in the average (mean) percentile rank from pre to posttest on the total math section of the Iowa Tests of Basic Skills (grades 2-8).

Documentation: ITBS scores from the fall and spring testing submitted to the Director of Evaluation and Research at the end of the program year.

Table 6 reports results of students completing the appropriate level of the ITBS during 1982-83. Results are indicated for only those students who took both the pre and posttest. The mathematics section

of the Iowa Tests of Basic Skills includes three subtests: math concepts, math problems and math computation. Summation of the raw scores achieved on the three subtests yields a "total math" raw score which is subsequently converted to a percentile rank for evaluation of this objective.

As shown by Table 6, students at all grade levels (2-8) achieved an increase in percentile rank in total math from pre to posttesting. During the 1981-82 school year math students in grades four and five showed a decrease in the mean percentile rank from pre to posttesting conducted that year. The 1982-83 results, however, show an increase at these levels. Earlier in this report, a recommendation was made that program staff consider specifying criteria for gains made by students from pre to posttesting on the ITBS/ITED. This recommendation would apply to both the reading and math lab programs. This objective was achieved.

TABLE 6

ITBS Pre/Post Results
Total Math (Mean Percentile Rank)

Grade	Level	Total Math*			
		N	Pre	Post	Gain
2	7	16	24	34	10
3	8	23	22	35	13
4	10	15	32	37	5
5	11	10	38	43	5
6	12	14	23	26	3
7	13	39	37	49	12
8	14	18	41	51	10

*Scores from three subtests (math concepts, math problems and math computation) are used to derive the total math score.

III A 2. At the end of the program year lab students enrolled a minimum of 80 days will demonstrate math proficiency by mastering an average of 80 percent of the mathematics objectives introduced according to each students' educational plan.

Documentation: Semester Summary Report submitted at the end of the year to the program coordinator. Educational plans on file with the mathematics lab teachers.

Program teachers recorded objectives introduced and mastered on each student's educational plan during the 1982-83 school year. At the end of the year, data for each student was recorded and summarized on the Semester Summary Report Form.

Table 7 reports data on objectives mastery for students enrolled in the mathematics lab program 80 days or more. This included a total of 213 students at 6 buildings. Composite data at the end of the table presents summary information by grade level. For the total population of 213 students enrolled in the mathematics lab program 80 days or more, 80.8 percent of the objectives introduced were attained. This exceeds the criterion indicated by the objective. When reporting by grade level and building, the following results were noted: (a) by grade level: students at grades 3, 4, 5 and 6 fell below the 80 percent attainment level; and (b) by building (all students): students at two buildings, Hanawalt and Moore, fell below the 80 percent attainment level. While this objective was achieved, a lower rate of attainment of objectives is noted in the mathematics lab program than in the reading lab program.

TABLE 7

Mathematics Objectives Introduced and Attained

School	Grade	N	Average Number of Objectives Introduced	Percent Attained
Hanawalt	1	2	19	75.7
	2	1	29	79.3
	3	4	26	71.2
	4	4	45	82.1
	5	4	36	70.1
	6	5	36	76.4
	1-6	20	34	75.9
Moore	1	2	33	66.7
	2	10	33	68.6
	3	11	39	70.5
	4	8	45	73.2
	5	5	44	68.0
	6	4	45	65.4
	1-6	40	40	69.6
Samuelson	1	8	20	81.9
	2	7	28	93.5
	3	7	19	87.4
	4	10	31	81.4
	5	3	27	86.4
	6	3	8	72.0
	1-6	38	24	85.2
Woodlawn	1	10	39	84.8
	2	5	35	90.3
	3	8	38	86.5
	4	10	29	83.3
	5	0		
	6	6	49	76.5
	1-6	39	37	83.9
Meredith	7	33	27	83.8
	8	6	17	91.9
	7-8	39	26	84.6
Merrill	7	21	49	83.6
	8	16	46	88.4
	7-8	37	48	85.6

Composite Data

Grade	N	Average Number of Objectives Introduced	Percent Attained
1	22	30	81.7
2	23	32	81.0
3	30	32	77.9
4	32	36	79.4
5	12	37	72.0
6	18	38	73.4
7	54	36	83.7
8	22	38	88.8
1-8	213	35	80.8

III A 3. At the end of the program year, at least 70 percent of the first grade students enrolled at least 80 days in the mathematics program will achieve a score of 26 or above on the Mathematics Test for Performance Objectives.

Documentation: Mathematics Test for Performance Objectives scores submitted to the Director of Evaluation and Research at the end of the program year.

Objective III A 3 was written in order to provide a student performance evaluation measure for first grade students. While pre/posttest data is not available (students do not take the Iowa Tests of Basic Skills until grade 2), their average score on the district's objectives-based math tests provides a reference point as to how they performed in math relative to the performance of other first grade students in the district.

District math tests were completed by 17 of the 22 first grade students enrolled 80 days or more. Their average score on the 40 item math test was 31.41 (78.5 percent correct). Of the 17 students tested, 14 or 82.4 percent scored 26 or above, thus exceeding the criterion level specified in the objective. The average score for the first grade students in the district taking the test was 34.77 or 86.92 percent

correct. Thus, the first grade math students in the program continued to remain in need of remediation in order to improve to the average for all district first grade students.

Teacher Process Objectives - Math Lab Program

IV B 1. The program teachers in each building served by the program will identify eligible student participants by September 23.

Documentation: class lists of identified students and the needs assessment checklist submitted to the program coordinator with the September accountability data.

Class lists indicating students identified to receive service in the mathematics lab program were submitted at the end of September. Revisions were sent in at other times as requested. These, along with teaching schedules, were maintained by the project coordinator in her office at Meredith Junior High School. In addition to a student's name and ID number, the class lists indicate whether a student was previously enrolled in this program or in Chapter I, the instrument(s) administered to this student for admittance to the program and the score attained, and the time of the school day during which the student has a math class instructed by a classroom teacher.

The class lists are not the best indictor of number of students served during the 1982-83 school year. As they are prepared very early in the year, they do not reflect the more stabilized population that is evidenced later on in the year. For a more meaningful tabulation of enrollment the reader should refer to Exhibit 2 of this report. The data shown there indicates only students who were served in the program 80 days or more. It also shows the number of students residing in the attendance area of each building and the number participating as a

result of the district's Voluntary Transfer Program. Enrollment figures in Exhibit 2 indicate a total of 213 students --107 enrolled through the Voluntary Transfer Program and 106 from within attendance areas of program schools. This objective was achieved.

IV B 2. Program teachers will develop and maintain an educational plan for each student receiving mathematics service.

Documentation: educational plans on file with each program teacher.

Individual Educational Plans (IEP's) were developed and maintained by program teachers during the school year. Educational plans are kept in booklets which are preprinted in a standard format but which allow for entering objectives and activities keyed to an individual student's program. The booklets also contain an area for teachers to record diagnostic information on students. The curriculum for math lab program students includes a heavy concentration on the district math curriculum objectives with a variety of strategies and materials used to help a student attain these. The project coordinator monitored the maintenance of all educational plans twice during the school year. This objective was achieved.

IV B 3. Program teachers will instruct a maximum of 40 students. Students will receive 110-250 minutes of instruction weekly.

Documentation: mathematics schedule submitted to the program coordinator by September 30 and resubmitted each time a schedule change is made.

Schedules were submitted by program teachers on or before September 30, 1982. Appendix A contains a copy of the schedule form. One teacher submitted a minor revision to her original schedule in March 1983. The schedules indicate the lab teaching time for each group, the number of

students in each group, the classroom math teacher's name and the planning schedule. Also shown on the schedule is the total number of teaching minutes per day. The time of the school day in which the student attends a regular math class is shown on the class lists.

The design for this program specifies several criteria concerning management of this program. A section in the description entitled "Organization for Instruction" specifies that each teacher will serve a maximum of 40 students with each pupil receiving from 110 to 250 minutes of instruction weekly depending upon grade level and building. All schedules indicated that these criteria were met. This objective was achieved.

IB B 4. By the end of the first semester, program teachers will have personal contact at home, school, or other prearranged location with parent(s) of at least 75 percent of the total number of students enrolled in the program for a minimum of 20 days. The parents of 65 percent of students new to the program will be visited in their homes or at a place selected by the parent(s).

Documentation: parent contact report on the semester summary submitted to the program coordinator, the building principal, and the Department of Evaluation and Research with the January accountability data.

IV B 5. By the end of the second semester each program teacher will have had a personal contact at home, school, or by telephone with the parent(s) of at least 75 percent of the total number of students enrolled in the program during the second semester.

Documentation: parent contact report on the semester summary submitted to the program coordinator, the building principal, and the Department of Evaluation and Research with the May accountability data.

Tables 8 and 9 report data on parent contacts for the first and second semester respectively. The discussion following the tables relates to both Objectives IV B 4 and IV B 5.

TABLE 8

Math Parent Contacts
First Semester

School	Number of Students	Number Contacted Personally*	Percent	Number of new Students	Number Contacted Personally	Percent	Total Contacts**
Hanawalt	21	20	95.2	9	8	88.9	45
Moore	41	35	85.4	29	24	82.8	99
Samuelson	42	40	95.2	21	20	95.2	97
Woodlawn	47	45	95.7	21	20	95.2	95
Meredith	37	29	78.4	33	26	78.8	81
Merrill	36	29	80.6	28	24	85.7	121
All Schools	224	198	88.4	141	122	86.5	538

*Contacted personally = home visit, conference, visit to school by parent.

**Total contacts = includes categories above plus telephone calls and other communication, i.e., letters.

TABLE 9

Math Parent Contacts
Second Semester

School	Number of Students	Number Contacted Personally*	Percent	Total Contacts**
Hanawalt	20	14	70.0	14
Moore	40	27	67.5	78
Samuelson	39	36	92.3	43
Woodlawn	37	35	94.6	35
Meredith	36	29	80.6	36
Merrill	36	30	83.3	59
All Schools	208	171	82.2	265

*Contacted personally = home visit, telephone call, conference, visit to school by parent.

**Total contacts = includes categories above plus other communications, i.e., letters.

For the first semester, the objective concerning parent contacts contains two criterion levels. It states that parents of at least 75 percent of the students enrolled 20 days or more will have been contacted personally by the program teacher during the semester. "Personal

contact" was defined to include home visits, conferences at school or classroom observation by the parents. Letters sent home by teachers and telephone calls were not considered personal contacts. The objective further states that parents of 65 percent of the students new to the program will be contacted personally.

Data submitted for 224 program students enrolled 20 days or more revealed that both parts of this objective were met overall and at each building.

For the second semester, the parent contact objective (IV B 5) is simplified. Teachers were allowed to include telephone calls as personal contacts. Only letters were exempt. As was the case during the first semester, this objective was achieved, although program teachers at Hanawalt and Moore had fewer than the number of contacts needed to achieve the criterion.

A tally was also made of <u>all</u> contacts, including cases where multiple contacts were made for a single student. It also included many cases where letters were sent. That tally showed 538 contacts during the first semester followed by 265 during the second semester. The total number of contacts made in 1982-83 was 803.

IV B 6. Student Team Learning--During the school year, program teachers will develop and maintain team learning situations which reflect a multicultural, nonsexist approach as children interact positively and strive for objectives-based goals in the areas of reading and math. (Refer to School Practices That Improve Race Relations and Student Teams and Achievement Divisions by Robert E. Slavin, Johns Hopkins University.)

Documentation: congruent with the goals of the Reading and Mathematics Lab Program, specific lesson plans will be implemented infusing multicultural, nonsexist concepts and submitted to the program coordinator.

The reader should refer to Objective IV B 6 in the evaluation of the objectives for the reading lab program in order to gain information concerning the development of this objective.

Documentation in the form of lesson plans was received from all program teachers. As in the reading lab program, it was obvious that teachers had put forth some effort toward developing a plan that infused the presentation of multicultural, nonsexist concepts with the ongoing lab program curriculum. It was noted that two math teachers assigned to separate secondary buildings jointly developed a plan which allowed for interaction among lab program students enrolled at separate buildings. This objective was achieved.

IV. COMMENTS

1. Students enrolled in the mathematics lab at all grade levels attained an increase in mean percentile rank from pre to posttesting as measured by the Iowa Tests of Basic Skills administered in October 1982 and again in April 1983. While program objectives do not specify a criterion for the amount of increase in the percentile rank, any increase on the precentile rank scale from pre to post-testing is indicative of some growth.
2. The total group of students enrolled in both the reading and mathematics programs mastered in excess of 80 percent of the reading and mathematics objectives introduced to them.
3. Program teachers in both reading and mathematics personally contacted parents of students at a rate that surpassed the criterion indicated in the objective. Three reading teachers contacted parents of all students served.
4. Teachers developed lesson plans and conducted activities that emphasized a multicultural, nonsexist approach infused with the ongoing curriculum according to copies of specific lesson plans submitted by each program teacher to the project coordinator.

V. RECOMMENDATIONS

1. The program coordinator should examine results obtained on the reading subtest of the Iowa Tests of Basic Skills particularly in grades three, four, five and six. Steps should be taken to improve achievement at these levels.
2. The reading lab program objective concerning performance of first grade students as measured by pre/posttests of the Systematic Approach to Reading Improvement (SARI) management system should be rewritten to precisely specify the level of achievement desired.
3. The program coordinator should consider specifying criteria for gains demonstrated by students on the Iowa Tests of Basic Skills. Gain criteria might be expressed in the student performance objective as an increase in percentile rank from pre to posttesting of a certain magnitude rather than just saying simply "an increase." The amount of increase expected could be different at various grade levels according to varying levels of growth expectation at certain stages.

APPENDIX A

Reading and Mathematics Lab Program Schedule

Reading and Math Lab Program

DES MOINES PUBLIC SCHOOLS Classroom Schedule

Date _____

Reading_____ Math_____ School:_____ Lab Teacher:_____

TEACHING SCHEDULE				PLANNING SCHEDULE	
Lab Teaching Time	Grade	Number of Students	Subject/ Classroom Teacher's Name	Time	Staff Involved

Total No. Teaching Minutes Per Day_____

Total No. of Students Served_____

Time Scheduled for Home Visits, Testing, Classroom Visits_____

3 Copies - One copy should be kept by the Lab Teacher. One copy should be filed with the Principal. One copy should be sent to the Program Coordinator. When schedule changes are made, revised copies should be sent to persons listed. Forward by September 17 each school year, and each time a schedule is changed.

A P P E N D I X B

Lesson Plan for Team Learning Situation

Ten Easy Steps for a Team Learning Situation
Multi-Cultural/Nonsexist Approach

1. Select objective from your educational plans.
2. Establish goal within the student group. Write goal so it is visible for students.
3. Establish reward for accomplishment of goal.
4. Establish step by step procedure for achievement of goal. List materials and activities to be utilized.
   a) Build peer tutoring into your developmental procedure.
   b) Chart procedure for group's instruction. Chart materials if obviously necessary for students to follow procedure.
5. Discuss appropriate group behavior:
   a) taking turns
   b) taking turns as leader
   c) choosing partners

   List some possible positive reinforcement statements students should attempt to use within their peer group during team learning process.
6. Provide direct instruction for objective to be mastered.
7. Read through activities with group. Provide opportunity for student's application of skill during prescribed activities.
8. Facilitate learning situation by assisting in directions or manipulations.
   a) Monitor positive reinforcement statements and peer tutoring.
9. Provide quiz to determine if goal (objective) has been reached by group.
10. Supply reward for acceptable performance.

Lesson Plan for Team Learning Situation

School:_____

Group:_____ Grade_____

Individuals' Objectives:

Day 1: Direct Instruction/Presentation of Material (Mc/NS Awareness)

Materials:

Procedure:

Day 2: Practice Skill Introduced (in pairs or small group)

Activity:

Activity:

Day 3: Practice Skill Introduced (in pairs or small group)

Activity:

Activity:

Day 4: Test Objective for Mastery (Evaluation)

Test Used:

Results:

Day 5: Reward Production and Team Effort

(Charts displayed or other means of showing team progress)